REMARKS

Claims 1-9 and 11-17 are pending in the application. Claims 1 and 11-17 have been amended herein. Claim 10 has been canceled. Claims 11, 12, 15 and 16 have been rewritten in independent form. Favorable reconsideration of the application, as amended, is respectfully requested.

I.   REJECTION OF CLAIMS 10 AND 11 UNDER 35 USC §101

Claim 10 stands rejected as reciting stream data representing non-statutory subject matter under 35 USC §101. Applicant has canceled claim 10, thereby rendering the rejection moot.

Claim 11 also is rejected under 35 USC §101 as being non-statutory. Specifically, the Examiner contends that the stream data stored on a computer readable medium represents a computer readable medium storing only non-functional descriptive material, and is therefore non-statutory. Applicant respectfully disagrees. Claim 11 recites a computer-readable storage medium having stream data stored thereon. The stream data stored on the storage medium has a particular data structure as claimed. Such structure enables improved reproduction for the reasons discussed in the present application.

MPEP 2106.01 defines functional descriptive data structures as statutorily patentable subject matter. Going beyond mere information content, those data structures that are embodied in computer-readable media are held to be statutory due to their ability to cause functional change in the computer. Specifically, "a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized. . . ." MPEP 2106.01. Accordingly, a data structure embodied in a recording medium is a computer-readable medium within the meaning of MPEP 2106.01, as it is more than a mere nonfunctional musical arrangement or compilation.

The requisite "functional interrelationship" of MPEP 2106.01 may be satisfied by the increased efficiency imparted solely by the organization of the claimed data structure. *In re Lowry* exemplifies the patentability of data structures that derive their functionality from information content. 32 F.3d 1579 (Fed. Cir. 1994). Here, the invention entailed a data processing system having a data structure that provided an efficient method of organizing stored data in a computer memory. *Id at* 1580-1581. Lowry's data structures imposed a specific physical organization of the relevant data in the form of a collection of bits, "the essence of an electronic structure." *Id. at* 1583. The specific sequence of bits in the data structure provided increased efficiency in such tasks as accessing files. *Id at* 1581. The Federal Circuit found this functionality sufficient to qualify Lowry's data structures as patentable subject matter.

Claim 11, in much the same manner, defines the structure of the encoded data, auxiliary information, attribute information and the relationship therebetween in accordance with the present invention. Accordingly, applicant respectfully submits that claim 11 does in fact represent statutory subject matter. Withdrawal of the rejection is respectfully requested.

II. *REJECTION OF CLAIMS 1-17 UNDER 35 USC §102(e)/103(a)*

Claims 1-7 and 10-17 remain rejected under 35 USC §102(e) based on *Sasaki et al.* Remaining claims 8-9 remain rejected under 35 USC §103(a) based on *Sasaki et al.* Applicant again respectfully traverses each of these rejections.

Applicant has previously argued how *Sasaki et al.* did not teach or suggest each of the features recited in the claims (see response filed on February 15, 2008). For example, applicant pointed out that the data recorded on the tape in *Sasaki et al.* is not decodable by the MPEG-2 system standard as claimed.

Conversely, the Examiner argues that *Sasaki et al.* does in fact disclose that the data recorded on the tape complies with the MPEG-2 system standard. Beginning on page 2 of the Office Action, the Examiner responds to applicant's arguments by citing several paragraphs in *Sasaki et al.* believed to support the rejection on the based of

teaching that the data recorded on the tape in *Sasaki et al.* complies with the MPEG-2 system standard.

Specifically, the Examiner cites paragraphs [0038], [0049], [0053] and [0066] of *Sasaki et al.* in support the contention that the signals are recorded on the tape in compliance with the MPEG-2 standard. The Examiner therefore maintains that *Sasaki et al.* teaches that the encoded data stored on the storage medium is decodable by either the auxiliary information file or the MPEG-2 system standard as claimed. However, applicant must respectfully disagree. To wit, the Examiner notes that:

> In response, the examiner respectfully disagrees. Sasaki et al. discloses from paragraph 0038 that "...digital VCR...allows video signals having a plurality of formats different from each other to be recorded and reproduced....scanning based on the NTSC system....scanning based on the PAL system can be recorded and reproduced with hardware almost not changed.....

However, paragraph [0038] reads:

> [0038] An embodiment in which the present invention is applied to a digital VCR will be described below. This embodiment is suitable for an environment of a broadcasting station and allows video signals having a plurality of formats different from each other to be recorded and reproduced. For example, both of a signal (480*i* signal) having an effective line count of 480 in interlaced scanning based on the NTSC system and a signal (576*i* signal) having an effective line count of 576 in interlaced scanning based on the PAL system can be recorded and reproduced with hardware almost not changed. In addition, it is made possible that a signal (1080*i* signal) having a line count of 1080 in interlaced scanning and signals (480*p* signal, 720*p* signal, and 1080*p* signal) having line counts of 480, 720, and 1080 in progressive (non-interlaced) scanning are recorded and reproduced.

Applicant respectfully submits that paragraph [0038] (reproduced above) merely points out that the invention in *Sasaki et al.* may be used with data in accordance with various different standards. Ultimately, data in accordance with the different standards may be recorded and reproduced as stated in paragraph [0038]. However, paragraph

[0038] does not refer to the data as being stored on the tape itself in accordance with such standard format. While not addressed in paragraph [0038], *the data in Sasaki et al. is recorded on the tape in accordance with the non-standard format shuffling as discussed in applicants' previous response*.

Regarding paragraph [0049], the Examiner states:

> paragraph 0049 that "...a recording area for recording data of one frame is set to a predetermined recording area...encoding is used in MPEG-2....to make recording....one slice is formed of one macroblock and one macroblock is placed in a fixed frame having a predetermined length in the present invention",

[0049] For example, a recording area for recording recording data of one frame is set to a predetermined recording area. Since variable-length encoding is used in MPEG2, the amount of data generated in one frame is controlled such that the data generated in one frame can be recorded into the predetermined recording area. In addition, to make recording into a magnetic tape suitable, one slice is formed of one macroblock and one macroblock is placed in a fixed frame having a predetermined length in the present embodiment.

Applicant acknowledges that paragraph [0049] references MPEG-2; however, the paragraph is not referring to the data as being stored on the tape in accordance with such format. Rather, the recording of the data takes into account the variable-length and coding used in MPEG-2. This is *not* to say that the data is recorded on the tape in accordance with the MPEG-2 standard. Rather, the data is recorded on the tape in the shuffling manner described by applicant in the previously filed response.

With regard to paragraph [0053], the Examiner notes that:

paragraph 0053 that "...shuffling section ... a macroblock into a fixed frame....Shuffling is also performed in which macroblocks generated in the order of scanning in one frame are rearranged and the recording positions of the macroblocks on the tape are dispersed....",

[0052] An elementary stream selected and output from the selector 103 is sent to a stream converter 106. The stream converter 106 collects DCT coefficients arranged in each DCT block according to the MPEG2 specification, by their frequency components throughout a plurality of DCT blocks constituting one macroblock and rearranges the collected frequency components. The rearranged converted elementary stream is sent to a packing and shuffling section 107.

[0053] Since video data in an elementary stream has been variable-length encoded, the length of the data of each macroblock is not equal. The packing and shuffling section 107 places a macroblock into a fixed frame. A portion which cannot fit in the fixed frame is sequentially placed in a blank area in another fixed frame. System data such as a time code is sent from an input terminal 108 to the packing and shuffling section 107, and receives recording processing in the same way as for picture data. Shuffling is also performed in which macroblocks generated in the order of scanning in one frame are rearranged and the recording positions of the macroblocks on the tape are dispersed. With this shuffling, even when data is fragmentarily reproduced during speed-change reproduction, the updating rate of a picture is improved.

Regarding paragraph [0052] (reproduced above), the paragraph describes converting data which has been provided in accordance with the MPEG-2 standard. Paragraph [0053], as referenced by the Examiner, then goes on to discuss how the data is then converted, packed, shuffled and recorded on the tape as discussed in applicants' previous response.

Referring to paragraph [0066], the Examiner states:

paragraph 0066 that "....the reproduced signal is converted to an elementary stream conforming to MPEG2". Sasaki et al. discloses a compressing section for generating encoded data, complying with MPEG-2 system standard, packing and shuffling section receives encoded data (complying with MPEG2 system standard) for generating a macroblock into a fixed frame and also rearranging the order of scanning in one frame. During reproduction, the reproduction signal is converted to an elementary stream conforming to MPEG2. Therefore, Sasaki meets the limitation of recording and reproducing of data, complying with the MPEG2 system standard.

[0066] The output of the interpolation section 140 is sent to a stream converter 141. The stream converter 141 performs the processing reverse to that performed by the stream converter 106 at the recording side. In other words, DCT coefficients arranged for each frequency component in DCT blocks are rearranged for each DCT block. With this operation, the reproduced signal is converted to an elementary stream conforming to MPEG2.

Regarding paragraph [0066] (reproduced above), *Sasaki et al.* does describe data being reproduced in accordance with the MPEG-2 standard. However, *paragraph [0066] is referring to converting the data stored on the tape back into the MPEG-2 format*. Paragraph [0066] is not referring to the data as stored on the tape being stored in the MPEG-2 standard format.

Applicant can only speculate that perhaps the Examiner feels that since the data prior to packing and shuffling as described in *Sasaki et al.* complies with the MPEG-2 standard, and because the data ultimately is converted back to the MPEG-2 standard during reproduction, *Sasaki et al.* meets the description of the encoded data being decodable by either the auxiliary information file or the MPEG-2 standard as recited in the claims. However, claim 1, for example, specifically recites a writing section which writes the encoded data (which complies with the MPEG-2 standard as recited earlier in the claim) on the storage medium. Thus, the encoded data is

decodable directly in accordance with the MPEG-2 standard without prior conversion from another data format to the MPEG-2 standard.

Nevertheless, in order to clarify even further that the encoded data *as stored on the storage medium* is a data file in compliance with the MPEG-2 standard, applicant has amended the claims. Specifically, the claims clearly state that *the encoded data stored on the storage medium is itself a data file complying with the MPEG-2 system standard*. As pointed out above and in applicant's previous response, *Sasaki et al.* does not teach or suggest storing encoded data on the storage medium with such data as stored on the storage medium itself complying with the MPEP-2 system standard.

For at least these reasons, applicant respectfully requests that the rejections be withdrawn.

III.   CONCLUSION

Accordingly, all claims 1-9 and 11-17 are believed to be allowable and the application is believed to be in condition for allowance. A prompt action to such end is earnestly solicited.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

   Should a petition for an extension of time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary), petition is hereby made and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988.

                         Respectfully submitted,

                         RENNER, OTTO, BOISSELLE & SKLAR, LLP

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                         DATE: _____October 14, 2008_____

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